

Lab #: 221237 Job #: 16345
 Sample Name/Number: RW02
 Company: Environmental Protection Agency, US
 Date Sampled: 9/20/2011
 Container: Dissolved Gas Bottle
 Field/Site Name: A3RSRS00-B
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 9/26/2011 Date Reported: 10/24/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.011			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	na			
Argon -----	1.60			
Oxygen -----	4.25			
Nitrogen -----	89.63			
Carbon Dioxide -----	1.01			
Methane -----	3.50	-75.19	-174.4	
Ethane -----	nd			
Ethylene -----	nd			
Propane -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0003			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 35

Specific gravity, calculated: 0.971

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.63

*Addition of helium negates the ability to detect native helium or hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 221238 Job #: 16345
 Sample Name/Number: RW04
 Company: Environmental Protection Agency, US
 Date Sampled: 9/20/2011
 Container: Dissolved Gas Bottle
 Field/Site Name: A3RSRS00-B
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 9/26/2011 Date Reported: 10/24/2011

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	na			
Argon -----	1.62			
Oxygen -----	2.99			
Nitrogen -----	91.23			
Carbon Dioxide -----	0.23			
Methane -----	3.93	-55.55	-155.8	
Ethane -----	0.0008			
Ethylene -----	0.0003			
Propane -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 40

Specific gravity, calculated: 0.963

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.63

*Addition of helium negates the ability to detect native helium or hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen and oxygen are relative to VSMOW. Calculations for BTU and specific gravity per D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.